

A NOVEL DESIGN FOR A HIGH POWER SUPERCONDUCTING DELAY LINE

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A novel design for a high power superconducting delay line of approximately 10 μ s duration is described. The transmitted signal should have a high signal-to-noise ratio, low dispersion level, and little attenuation. Such demands cannot be met using conventional metal conductors. This paper outlines a proposal for a new transmission line design using low temperature superconducting material which meets system specifications. The 25 Ω line is designed to carry pulsed signals with approximately a 100 MHz bandwidth and a nominal voltage magnitude of 10kV. Predicted electrical design and performance of the line will be presented.

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